



SUMOstar™ Gene Fusion Technology

ENHANCING FUNCTIONAL PROTEIN EXPRESSION AND
PURIFICATION IN YEAST

Yeast (*Pichia pastoris*) Secretory SUMOstar Expression System Vector Map and Sequence

January 2013

Catalog Numbers

2160 (Kit)
2161 (Vector)

LifeSensors

www.lifesensors.com

LifeSensors, Inc.
271 Great Valley Parkway
Malvern, PA 19355

www.lifesensors.com
info@lifesensors.com
techsupport@lifesensors.com
610.644.8845 (phone)
610.644.8616 (fax)

Polylinker Map ATGAGATTTCTTCAATTTTTACTGCTGTTTTATTTCGCAGCATCCTCCGATTAGTCTCCAGTCAACACTA
TACTCTAAAGGAAGTTAAAAATGACGACAAAATAAGCGTCGTAGGAGGCGTAATCGACGAGGTCAGTTGTGAT
Alpha Secretary Sequence

CAACAGAAGATGAAACGGCACAAATCCGGCTGAAGCTGTCATCGGTTACTCAGATTTAGAAGGGGATTTTCGA
GTTGTCTTCTACTTTGCCGTGTTTAAAGGCCGACTTCGACAGTAGCCAATGAGTCTAAATCTTCCCCTAAAGCT

TGTTGCTGTTTTGCCATTTTCCAACAGCACAAATAACGGGTTATTGTTTATAAATACTACTATTGCCAGCATT
ACAACGACAAAACGGTAAAAGGTTGTCGTGTTTATTGCCCAATAACAAATATTTATGATGATAACGGTCGTA

GCTGCTAAAGAAGAAGGGGTATCTCTCGAGAAAAGAGAGGCTGAAGCTGCAGACTACAAGACGATGACGACA
CGACGATTTCTTCTCCCATAGAGAGCTCTTTTCTCTCCGACTTCGACGTCTGATGTTTCTGCTACTGCTGT
Flag Tag

AGGGACATCACCATCATCATCACGGAGGTTCCGACTCAGAAGTCAATCAAGAGGCTAAGCCAGAGGTCAAGCC
TCCCTGTAGTGGTAGTAGTGCCTCCAAGCCTGAGTCTTCAGTTAGTTCTCCGATTCCGGTCTCCAGTTCCG
6x His Tag **SUMOstar Fusion Protein**

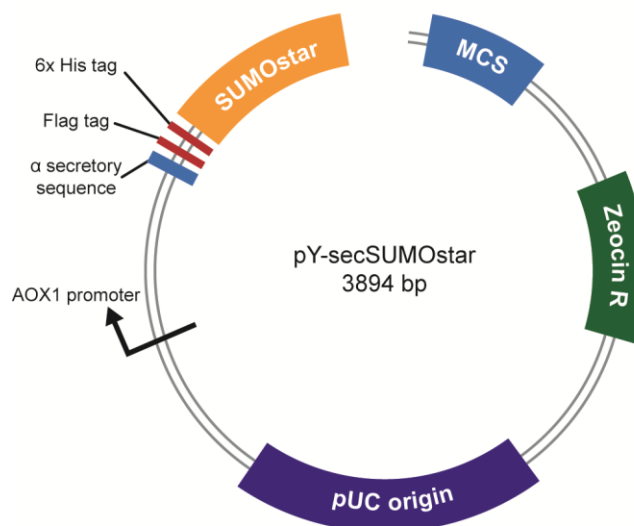
AGAAGTCAAGCCTGAGACTCACATCAATTTAAAGGTGTCGGATGGATCTTCAGAGATCTTCTTCAAGATCAAA
TCTTCAGTTCGGACTCTGAGTGTAGTTAAATTTCCACAGGCTACCTAGAAGTCTCTAGAAGAAGTTCTAGTTT

AAGACCACTCCTTTAAGAAGGCTGATGGAAGCGTTCGCTAAAAGACAGGTAAGGAAATGGACTCCTTAACGT
TTCTGGTGAGGAAATCTTCCGACTACCTTCGCAAGCGATTTTCTGTCCATTCTTTACCTGAGGAATTGCA

TCTTGACGACGGTATTGAAATTCAGCTGATCAGACCCTGAAGATTTGGACATGGAGGATAACGATATTAT
AGAACATGCTGCCATAACTTTAAGTTCGACTAGTCTGGGGACTTCTAAACCTGTACCTCTATTGCTATAATA

TGAGGCTCACCGCAACAGATTGG AGGTTGAGACGGCATGCCGTCTCT **SphI BsmBI**
ACTCCGAGTGGCGCTTGTCTAACTCTCA ACTCTGCCGTACGGCAGAGAGATC **BsmBI** **XbaI**
Multi-Cloning Site

SalI
TCTCAGAAGAGGATCTGAATAGCGCCGTCGACCATCATCATCA
AGAGTCTTCTCCTAGACTTATCGCGGCAGCTGGTAGTAGT



Vector Sequence	AGATCTAACA	TCCAAAGACG	AAAGGTTGAA	TGAAACCTTT	TTGCCATCCG
	ACATCCACAG	GTCCATTCTC	ACACATAAGT	GCCAAACGCA	ACAGGAGGGG
101	ATACACTAGC	AGCAGACCGT	TGCAAACGCA	GGACCTCCAC	TCCTCTTCTC
	CTCAACACCC	ACTTTTGCCA	TCGAAAAACC	AGCCCAGTTA	TTGGGCTTGA
201	TTGGAGCTCG	CTCATTCCAA	TTCCTTCTAT	TAGGCTACTA	ACACCATGAC
	TTTATTAGCC	TGTCTATCCT	GGCCCCCTG	GCGAGGTTCA	TGTTTGTTTA
301	TTTCCGAATG	CAACAAGCTC	CGCATTACAC	CCGAACATCA	CTCCAGATGA
	GGGCTTTCTG	AGTGTGGGGT	CAAATAGTTT	CATGTTCCCC	AAATGGCCCA
401	AAACTGACAG	TTTAAACGCT	GTCTTGGAAC	CTAATATGAC	AAAAGCGTGA
	TCTCATCCAA	GATGAACTAA	GTTTGGTTCG	TTGAAATGCT	AACGGCCAGT
501	TGGTCAAAAA	GAAACTTCCA	AAAGTCGGCA	TACCGTTTGT	CTTGTTTGGT
	ATTGATTGAC	GAATGCTCAA	AAATAATCTC	ATTAATGCTT	AGCGCAGTCT
601	CTCTATCGCT	TCTGAACCCC	GGTGCACCTG	TGCCGAAACG	CAAATGGGGA
	AACACCCGCT	TTTTGGATGA	TTATGCATTG	TCTCCACATT	GTATGCTTCC
701	AAGATTCTGG	TGGGAATACT	GCTGATAGCC	TAACGTTTCA	GATCAAAATT
	TAAGTGTCT	AACCCCTACT	TGACAGCAAT	ATATAAACAG	AAGGAAGCTG
801	CCCTGTCTTA	AACCTTTTTT	TTTATCATCA	TTATTAGCTT	ACTTTTCATAA
	TTGCGACTGG	TTCCAATTGA	CAAGCTTTTG	ATTTTAACGA	CTTTTAACGA
901	CAACTTGAGA	AGATCAAAAA	ACAATAATT	ATTCGAAACG	ATGAGATTTT
	CTTCAATTTT	TACTGCTGTT	TTATTTCGAG	CATCCTCCGC	ATTAGCTGCT
1001	CCAGTCAACA	CTACAACAGA	AGATGAAACG	GCACAAATTC	CGGCTGAAGC
	TGTCATCGGT	TACTCAGATT	TAGAAGGGGA	TTTCGATGTT	GCTGTTTTGC
1101	CATTTTCCAA	CAGCACAAAT	AACGGGTTAT	TGTTTATAAA	TACTACTATT
	GCCAGCATTG	CTGCTAAAGA	AGAAGGGGTA	TCTCTCGAGA	AAAGAGAGGC
1201	TGAAGCTGCA	GACTACAAAG	ACGATGACGA	CAAGGGACAT	CACCATCATC
	ATCACGGAGG	TTCGGACTCA	GAAGTCAATC	AAGAGGCTAA	GCCAGAGGTC
1301	AAGCCAGAAG	TCAAGCCTGA	GACTCACATC	AATTTAAAGG	TGTCCGATGG
	ATCTTCAGAG	ATCTTCTTCA	AGATCAAAAA	GACCACTCCT	TTAAGAAGGC
1401	TGATGGAAGC	GTTTCGCTAAA	AGACAGGGTA	AGGAAATGGA	CTCCTTAACG
	TTCTTGTACG	ACGGTATTGA	AATTCAAGCT	GATCAGACCC	CTGAAGATTT
1501	GGACATGGAG	GATAACGATA	TTATTGAGGC	TCACCGCGAA	CAGATTGGAG
	GTTGAGACGG	CATGCCGTCT	CTCTAGAACA	AAAACATC	TCAGAAGAGG
1601	ATCTGAATAG	CGCCGTCGAC	CATCATCATC	ATCATCATTG	AGTTTGTAGC
	CTTAGACATG	ACTGTTCTC	AGTTCAAGTT	GGGCACTTAC	GAGAAGACCG
1701	GTCTTGCTAG	ATTCTAATCA	AGAGGATGTC	AGAATGCCAT	TTGCCTGAGA
	GATGCAGGCT	TCATTTTTGA	TACTTTTTTA	TTTGTAACCT	ATATAGTATA

1801 GGATTTTTTTT TGTCATTTTG TTTCTTCTCG TACGAGCTTG CTCCTGATCA
 GCCTATCTCG CAGCTGATGA ATATCTTGTG GTAGGGGTTT GGGAAATCA
 1901 TTCGAGTTTG ATGTTTTTCT TGGTATTTCC CACTCCTCTT CAGAGTACAG
 AAGATTAAGT GAGACCTTCG TTTGTGCGGA TCCCCCACAC ACCATAGCTT
 2001 CAAAATGTTT CTA CTACTCCTTT TTTACTCTTC CAGATTTTCT CGGACTCCGC
 GCATCGCCGT ACCACTTCAA AACACCCAAG CACAGCATA TAAATTTTCC
 2101 CTCTTTCTTC CTCTAGGGTG TCGTTAATTA CCCGTAATA AGGTTTGGAA
 AAGAAAAAAG AGACCGCTC GTTTCTTTTT CTTCGTCGAA AAAGGCAATA
 2201 AAAATTTTTA TCACGTTTCT TTTTCTTGAA ATTTTTTTTT TTAGTTTTTT
 TCTCTTTCAG TGACCTCCAT TGATATTTAA GTTAATAAAC GGTCTTCAAT
 2301 TTCTCAAGTT TCAGTTTCAT TTTTCTTGTT CTATTACAAC TTTTTTACT
 TCTTGTTTCAT TAGAAAGAAA GCATAGCAAT CTAATCTAAG GGGCGGTGTT
 2401 GACAATTAAT CATCGGCATA GTATATCGGC ATAGTATAAT ACGACAAGGT
 GAGGAACTAA ACCATGGCCA AGTTGACCAG TGCCGTTCCG GTGCTCACCG
 2501 CGCGCGACGT CGCCGGAGCG GTCGAGTTCT GGACCGACCG GCTCGGGTTC
 TCCCCGGACT TCGTGGAGGA CGACTTCGCC GGTGTGGTCC GGGACGACGT
 2601 GACCCTGTTC ATCAGCGCGG TCCAGGACCA GGTGGTGCCG GACAACACCC
 TGGCCTGGGT GTGGGTGCGC GGCCTGGACG AGCTGTACGC CGAGTGGTGC
 2701 GAGGTCGTGT CCACGAACTT CCGGGACGCC TCCGGGCCGG CCATGACCGA
 GATCGGCGAG CAGCCGTGGG GGCGGGAGTT CGCCCTGCGC GACCCGGCCG
 2801 GCAACTGCGT GCACTTCGTG GCCGAGGAGC AGGACTGACA CGTCCGACGG
 CGGCCACGG GTCCAGGCC TCGGAGATCC GTCCCCCTTT TCCTTTGTGC
 2901 ATATCATGTA ATTAGTTATG TCACGCTTAC ATTCACGCC TCCCCCACA
 TCCGCTCTAA CCGAAAAGGA AGGAGTTAGA CAACCTGAAG TCTAGGTCCC
 3001 TATTTATTTT TTTATAGTTA TGTTAGTATT AAGAACGTTA TTTATATTTT
 AAATTTTTCT TTTTTTCTG TACAGACGCG TGTACGCATG TAACATTATA
 3101 CTGAAAACCT TGCTTGAGAA GGTTTTGGGA CGCTCGAAGG CTTTAATTTG
 CAAGCTGGAG ACCAACATGT GAGCAAAAGG CCAGCAAAG GCCAGGAACC
 3201 GTAAAAGGC CGCGTTGCTG GCGTTTTTCC ATAGGCTCCG CCCCCCTGAC
 GAGCATCACA AAAATCGACG CTCAAGTCAG AGGTGGCGAA ACCCGACAGG
 3301 ACTATAAAGA TACCAGGCGT TTCCCCCTGG AAGCTCCCTC GTGCGCTCTC
 CTGTTCCGAC CCTGCCGCTT ACCGGATACC TGTCCGCTT TCTCCCTTCG
 3401 GGAAGCGTGG CGCTTTCTCA ATGCTCACGC TGTAGGTATC TCAGTTCGGT
 GTAGGTCGTT CGCTCCAAGC TGGGCTGTGT GCACGAACCC CCCGTTCCAGC
 3501 CCGACCGCTG CGCCTTATCC GGTAACATC GTCTTGAGTC CAACCCGGTA
 AGACACGACT TATCGCCACT GGCAGCAGCC ACTGGTAACA GGATTAGCAG

3601 AGCGAGGTAT GTAGGCGGTG CTACAGAGTT CTTGAAGTGG TGGCCTAACT
ACGGCTACAC TAGAAGGACA GTATTTGGTA TCTGCGCTCT GCTGAAGCCA

3701 GTTACCTTCG GAAAAAGAGT TGGTAGCTCT TGATCCGGCA AACAAACCAC
CGCTGGTAGC GGTGGTTTTT TTGTTTGCAA GCAGCAGATT ACGCGCAGAA

3801 AAAAAGGATC TCAAGAAGAT CCTTTGATCT TTTCTACGGG GTCTGACGCT
CAGTGGAACG AAAACTCACG TTAAGGGATT TTGGTCATGA GATC